

REMARKS/ARGUMENTS

Claims 18 through 28 are currently pending in the present application. Claims 1 through 17 were withdrawn from further consideration as being drawn to a non-elected invention. Claim 18 has been amended herein for clarification, while new dependent claims 28 and 29 have been added.

Support for the claim amendment is provided in the first full paragraph of page 13 of the original application, where it is stated that "[f]uel inerting valve **344** can be adjusted during the period of fluid recirculation to allow the introduction of hydrogen to the recirculating fluid, thereby reacting with any oxygen still present therein. The reduction in fuel cell voltage (which can be measured by conventional means) can be used as an indication that the cathode is inerted."

Support for the new claims is provided in the first paragraph of page 14 of the original application, wherein it is stated that "[o]nce the hydrogen has been purged from the anode **310**, it may then be purged with air (or other fluids, if desired). In this situation, the fuel inerting valve **344** is closed, allowing fluid in the recirculation loop **352** that has been pressurized by pressure source **360** to flow into the anode **310** through purge valve **346**. This last step ensures that air is present on both the anode **310** and cathode **330** during periods of inactivity of fuel cell **300**." As such, no new matter has been entered.

Rejections under 35 U.S.C. §103

Claims 18 through 25 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Cargnelli et al (US 2004/0146761, hereinafter Cargnelli). Cargnelli in no way teaches a fuel cell system that uses a cathode recirculation loop to combine fuel from an anode flowpath oxygen from the recirculation loop in order to reduce the voltage at the fuel cell electrodes. By this response, independent claim 18 has been amended to more clearly make this distinction.

In the second full paragraph on page 2 of the present rejection, the Examiner candidly admits that Cargnelli does not teach reacting fuel with the recycled cathode exhaust, then proceeds to explain over the next four sentences why Cargnelli's humidification of the incoming hydrogen fuel stream produces preferable results. The value in such an approach as taught by Cargnelli is both arguably true and entirely irrelevant to the present claims, as Cargnelli is entirely silent as to using a cathode recirculation loop to avoid the presence of high voltages in the fuel cell during system startup and shutdown.

In fact, the supposed recirculation loop **40** of Cargnelli is incapable of functioning like the claimed recirculation loop, as rather than recycling cathode fluid through the claimed recirculation loop **352** of the cathode flowpath **350** depicted in original FIG. 2C of the application), the supposed recirculation loop **40** merely takes cathode exhaust fluid that (after exchanging heat and humidity with various flowpaths) is "discharged to the environment along a discharge line **50**", as unequivocally described in the last sentence of paragraph [0022].

The fact that the supposed recirculation loop of Cargnelli is not the same structure as that of the claimed device, coupled with the complete failure of Cargnelli to teach or suggest the cooperation of this recirculation loop with the other recited features of independent claim 18, is overwhelming evidence that continued reliance upon Cargnelli as a basis for an obviousness rejection is unavailing.

In conclusion, the Applicant respectfully submits that the amended independent claims are in condition for allowance. Furthermore, since all of the claims that depend from the independent claims place further limits thereon, the Applicant is of the belief that they too are in condition for allowance. The Examiner is encouraged to contact the undersigned to resolve efficiently any formal matters or to discuss any aspects of the application or of this response. Otherwise, notification of allowable subject matter is respectfully solicited.

Respectfully submitted,

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